# REPORT OF THE TECHNICAL COMMITTEE ON INDEX NUMBERS OF FOREIGN TRADE OF INDIA



GOVERNMENT OF INDIA MINISTRY OF COMMERCE DECEMBER, 1980

# ANNEXES

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#### CHAPTER - I

#### INTRODUCTION

The responsibility for construction and publication of index numbers of foreign trade of India lies with the Directorate General of Commercial Intelligence and Statistics (D.G.C.I.& S.), Calcutta, which is a subordinate office of the Ministry of Commerce, Government of India. Monthly and annual index numbers of unit (declared) values and of the quantum of foreign trade are published, separately for exports and imports and for a number of classes of commodities. Gross, net and income terms of trade are also computed from these index numbers.

- 1.0.1 Prior to January 1957, the index numbers of foreign trade were prepared on 1952-53 = 100 as base. Subsequently the base was shifted to the year 1958. The index numbers on base 1958 = 100 continued upto 1974-75 when the base was again shifted to the year 1968-69 which is the base for the existing series of index numbers.
- 1.0.2 As the DGCI&S itself is responsible for compilation and publication of foreign trade statistics of India, no special effort is required for the acquisition of data for the construction of these index numbers. For the basic data on foreign trade, the DGCI&S is dependent on Customs Houses and on foreign postal appraisers.

# 1.1 Background of the formation of the Committee

As already stated, the existing series of index numbers are based on 1968-69 as base year. Computation of

<sup>1. &#</sup>x27;Gross terms of trade' is defined as the ratio of Quantum Index of Import and that of Export, 'Net terms of trade' is defined as the ratio of Unit-value Index of Export and that of Import while 'Income terms of trade' is defined as the product of 'Net terms of trade and 'Quantum Index of Export'.

the index numbers takes account of quantum and value data for 489 commodities (as per Revised Indian Trade Classification (RITC) for exports and for 511 commodities under imports. In terms of percentage of value of trade in the base year, the coverage of these lists is 92 for exports and 89 for imports. The indices are presented for 26 commodity heads under exports and for 27 commodity heads under imports (Annex-I). On the adoption of the Indian Trade Classification Revision II ITC-R.2 with effect from April, 1977, it became necessary to regroup the items, and the computations for subsequent months are based on the data for nearly one thousand items matched with the original items chosen as per RITC.

- 1.1.1 The present series of index numbers has some serious limitations at least if it is used for the late seventees. These are briefly mentioned below:-
  - (i) The pattern of India's foreign trade has undergone marked changes (vide tables 1 & 2) during the last decade. Owing to diversification of exports, import substitution, structural changes in domestic production and other factors. A good number of commodities like (as per RITC) 6119104, 6119203, 6119204, 7196401 etc. in case of exports and 2663101, 5133501, 6517105, 6612001 etc. in case of imports not included in the present commodity basket have become dominant in the foreign trade of India in the recent years, while others like (as per RITC) 6532106, 6822107, 6842112, etc. in case of exports and 0481200, 2640001, 2640002, 6974122 etc. in case of import have become virtually

insignificant. The coverage of trade for the sampled commodities registered a sharp fall over the years especially for exports (vide Table 3). This is natural as the base 1968-69 has become fairly old.

Table 1 : Percentage share of existing commodity heads in total export of India.

COMMODITY HEADS	Percentage share in total trade		
	1968-69	1978-79	
1 2	2	3	
Section : 0-Food	26.8	25.5	
Fish & Fish preparations	1.6	3.9	
Fruits & Vegetables	5.3	2.5	
Sugar, sugar preparations & honey	7.8	2.4	
Coffee	1.3	2.5	
Tea and Mate	11.5	6.0	
Spices	1.9	2.6	
Oilseed cake	3.6	2.0	
Section: 1-Beverages & Tobacco	2.5	2.1	
Section: 2-Crude materials inedible except fuels	15.6	9.0	
Hides, skins & fur skins undressed	0.4	• • •	
Wool and other animal hair	0.4	• • •	
Cotton	1.2	0.4	
Crude fertilisers & minerals excld. coal, petroleum crude etc.	1.4	7.9	
Metalliferrous Ores & Metal scrap	8.4	4.9	
Crude animal & Vegetable materials	2.7	2.2	

		<del></del>
1	2	3
contd.		
Section: 3-Mineral fuels & Lubricants	0.9	0.3
Coal, coke and briquettes	0.2	0.1
Section: 4-Animal & Vegetable Oils & fats	0.9	0.3
Fixed vegetables & fats	0.9	0.2
Section: 5-Chemicals	1.7	2.7
Section: 6-Manufactured goods Classified chiefly by materials	44.5	40.8
Leather & manufactures thereof	5.4	5.7
Textile yarn & thread	1.8	0.7
Textile fabrics, Woven (other than cotton & jute)	0.8	0.3
Floor coverings	1.2	2.1
Cotton manufactures (excld. yarn and thread and clothing)	6 <b>.</b> 5	5.1
Jute manufactures (excld. twist and yarn)	1.6	2.8
Iron and steel	5.8	3.9
Non ferrous metals	1.1	1.9
Manufactures of metals	1.3	3,5
Section: 7-Machinery & Transport	3.2	6.9
Section: 8-Misc. Manufactured Articles	3.4	12.2
Clothing etc.	1.1	8.0
Pootwear	0.7	0.5
Total over all	100.0	100.0

Table 2 : Percentage share of existing commodity heads in total import of India.

COMMODITY HEADS (According to RITC)	Percentage share in total trade	
	1968-79	1978-79
1	2	3
Section: 0 - Food	21.7	3.6
Dairy products & eggs	0.8	0.9
Cereals & cereal preparations	18.1	1.7
Fruits & Vegetables	2.5	0.8
Section: 1-Beverages & Tobacco	0.06	0.01
Section: 2-Crude materials inedible except fuels	10.2	8.6
Pulp and waste paper	0.6	0.6
Wool and other animal hair	0.6	0.5
Cotton	4.8	0.4
Jute	<b>0.</b> 5	0.02
Crude fertilisers & minerals excl. coal, petroleum crude etc.	2.0	1.7
Section: 3-Mineral fuels & Lubricants	4.5	24.8
Petroleum crude etc.	2.9	18.4
Section: 4-Animal & Vegetable oils & fats	1.0	8.4
Section: 5-Chemicals	15.1	12.3
Chemical elements & compounds	4.4	3.33
Dyeing, tanning & colouring materials	0.5	0.3
Fertilisers manufactured	7.4	5.5
Plastic materials regenerated	0.8	1.0

	<del></del>	
1	2	3
contd.	· <del></del>	
Section: 6-Manufactured goods classified chiefly by materials	13.4	21.9
Paper, paper board	1.0	1.5
Textile yarn, fabrics etc.	0.4	0.7
Iron and steel	4.6	6.9
Copper	2.1	1.5
Nickel	0.3	0.4
Aluminium	0.2	0,5
Lead	0.3	0.2
Zinc	1.1	0.5
Tin	0.6	0.4
Manufactures of metals	0.7	0.7
Section: 7-Machinery & Transport equipment	27.7	18.1
Machinery other than electric	19.9	11.1
Electric machinery etc.	4.5	3.0
Transport equipment	3.5	4.0
Section: 8-Miscellaneous Manufactured Articles	1.3	2.1
Professional Scientific instruments etc	0.9	1.8
Over all:	100.0	100.0

Table 3: Percentage coverage of the commodity basket in existing index numbers on base 1968-69

Percentage coverage	
Export	Import
91 9	89° <b>.</b> ¢
89.4	70.8
88.8	91.3
89.2	92.0
84.4	91.4
87.3	92.9
87.4	92.5
86.5	93.9
81.9	90.1
71.7	85.9
65.1	82.4
	91.9 89.4 88.8 89.2 84.4 87.3 87.4 86.5

(ii) Adoption of ITC-R.2 with effect from 1977-78 created difficult problems for the matching of items after March 1977 with those in the original basket. Actually, no matching was possible where the denominations of quantity have undergone changes.

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# 1.2 Govt. of India Resolution

In view of the above, it was felt that the existing index numbers on base 1968-69 did not correctly reflect the trends in the quantum and in the Unit-value of India's foreign trade and hence in the derived terms of trade.

Accordingly, the Government of India in the Ministry of Commerce set up a Technical Committee in June 1980 to re-examine the methodology of construction of existing index numbers of foreign trade. The terms of reference of the Committee were :-

- "1. To improve the current methodology of computing indices of foreign trade statistics of India.
  - 2. To revise the base year for the computation of foreign trade indices."
    - ( Vide Govt. of India Resolution No. 4(10)/80-EPL dated the 5 June, 1980, reproduced in Annex II ) 2,3

1.2.1 The first meeting of the Committee took place on 27 June 1980. Later on, with a view to studying the effects of different index number formulae and also the difference between indices on fixed base and chain base systems, the Committee requested the Indian Institute of Foreign Trade (IIFT) to carry out a number of exercises utilizing the export trade data available on their magnetic tape. As the IIFT did not have their own computer the work was done on the computer of the Planning Commission. The acquisition of documents on the methodology followed in some advanced countries also took considerable time. Due to all these

<sup>2.</sup> The post of the Director General, Commercial Intelligence & Statistics, was lying vacant uptil 29 August 1980. Shri D.C. Datta joined as the Director General, Commercial Intelligence & Statistics, on 30 August 1980.

<sup>3.</sup> Dr. S.V. Rao was posted as Joint Adviser in the Planning Commission till 12 September 1980. He continued to be a Member of the Committee, after he re-joined as Professor of Economics in his parent department namely, the Department of Co-operation and Applied Economics, Andhra University.

reasons the Committee could not complete their deliberations within the period of 4 months stipulated in the aforesaid Resolution, and at its request, the time of the Committee was extended by another 2 months <u>vide</u> Govt. of India Resolution No. 4(10)/80-EPL dated 12.11.80 (Annex III).

# 1.3 Modus operandi of the Committee

All the meetings of Committee were held at the office of the D.G.C.I.& S., Calcutta, who is the Member-Secretary of the Committee. The first meeting was held on 27 June 1980 where inter alia it was decided to study the methodology followed by a few developed countries of the world, viz. USA, U.K., Canada, GDR and Japan. Accordingly, the Chairman requested the appropriate official agencies in these countries for copies of publications giving the details of the methodology followed by them.

- 1.3.1 The second meeting was held on 30 August 1980 and at this meeting it was decided that the base of the proposed series should be 1978-79. In the meanwhile IIFT was requested to carry out some exercises as mentioned in para 1.2.1.
- 1.3.2 Besides, the above calculations, all other exercises like, examination of homogeneity of commodities included in the present series, study on wholesale price index numbers and Export Index nos. of Unit-value etc., undertaken by the Committee were carried out by the office of the D.G.C.I. & S.
- 1.3.3 The third meeting of the Committee took place on 20 and 21 November 1980 after receipt of the computer outputs from IIFT. Most of the major decisions of the Committee like selection of formulae were reached in this meeting. The report was then drafted and circulated to the members. It was then finalised at a meeting held on 19 and 20 December, 1980.

#### CHAPTER - 2

# EXISTING SERIES OF INDEX NUMBERS AND THEIR LIMITATIONS

As stated earlier, monthly and annual index numbers of unit values and of the quantum of India's foreign trade are constructed, separately for exports and imports, for different classes of commodities. Three types of terms of trade are also calculated, viz. the net terms of trade, the gross terms of trade and the income terms of trade. Below is given some details of the construction of the index numbers of the existing series.

2.0.1 The main sources of Foreign Trade Data are the 'Shipping bills' and 'Bills of entry' in case of exports and imports respectively. These data are processed and published in the D.G.C.I. & S. monthly publication, "Monthly Statistics of the Foreign Trade of India-Vols I & II". In each monthly publication, besides data for the current month, cumulative data (both quantity and value) from April to the concerned month are also given. These data are published according to commodities with countrywise shares. Commodities have been classified by 7-digit codes of the Indian Trade Classification Revision 2(ITC-Rev.2) which is based on the International Trade Classification, namely, SITC-Rev. 2. ITC-Rev. 2 has been implemented w.c.f. April 1977. Prior to April 1977, the Revised Indian Trade Classification (RITC) used to be followed. In RITC, more than 5000 commodities have been classified whereas in ITC-Rev. 2 more than 6660 commodities have been classified. For compilation of Index numbers, data published in the 'Monthly Statistics of the Foreign Trade of India' are used.

- 2.0.2 For construction of Index numbers 489 commodities (as per RITC) are chosen for exports which accounted for 92 per cent of the value of exports during the base year (1968-69). In case of Imports, 511 commodities (as per RITC) are chosen which accounted for 89 per cent of imports during 1968-69. Due to changes in pattern of India's foreign trade the percentage coverage of commodities included for construction of Index numbers showed a downward trend especially for exports. In 1978-79, the coverage was only 65.1 per cent in case of exports and 82.4 per cent in case of imports.
- Paasche formula is adopted for the construction of Unit-value index numbers whereas Laspeyres formula is adopted for the construction of quantum index numbers. In actual construction, the quantity index numbers are derived by dividing the value index numbers by the corresponding unit value index numbers. As all the commodities entering into the foreign trade of India can not be taken into account, adjustments are made for incomplete coverage. This is based on the assumption that average change in Unit-value for all the items. (sampled and non-sampled) within a "block" (i.e., cluster of commodities believed to be reasonably homogeneous) is equal to that of the sampled commodities within the same In the construction of the present series each major commodity head for which the index numbers are published is treated as a block for such adjustment (see para below).
- 2.0.4 Besides the sectional (as per RITC) Index numbers, index numbers for major commodity heads (26 for exports and 27 for imports) are also constructed for each type of trade and published in the DGCI&S weekly organ, the Indian Trade Journal.

- 2.0.5 Some of the major limitations of the present series mentioned earlier may be recalled at this stage.
- 2.0.6 First, the base year (1968-69) is rather old and the pattern of India's foreign trade has undergone substantial changes in the seventees. As a result, the commodity basket considered in the index number computations does not cover a sufficiently high percentage of the total value of trade particularly for exports (vide Table 3 of Chapter 1).
- 2.0.7 Second, there are serious problems of matching commodities in the period after March 1977, when the ITC-Rev 2 is used, with commodities in the basket considered for index computations which refer to the previous RITC.
- 2.0.8 Another limitation is the time-lag in the availability of the Index numbers. Due to various reasons there are inordinate delays in the availability of foreign trade statistics based on which index numbers are constructed. At present this delay is about 12 months and about another month is taken for the manual computation of indices bringing the total timelag to 13 months.
- 2.0.9 There are, however, other limitations of the existing series and other related issues which drew the attention of the Committee. For the sake of convenience, these matters are listed below and discussed in the subsequent chapters:
  - (i) The present format of presentation of the index numbers needs a revision. The scheme of classification of commodities may be made more useful for economic analysis and policy making.

- (ii) Index numbers may also be prepared on a quarterly basis.
- (iii) Construction of bilateral index numbers and bilateral terms of trade is not done on any regular basis.
  - (iv) Attempts should be made to carry out some Seasonal adjustments of the existing series of index numbers.
    - (v) In view of rapid changes in the pattern of trade the question arises as to whether the existing index number formulae are fully appropriate and whether indices on the chain base system would not be more suitable than the existing ones on the fixed base system.
- (vi) No revision of the index numbers is carried out even though the foreign trade data are revised after their first publication based on late returns from the Customs Houses.
- (vii) In view of the great delay in the availability of the index numbers, it might be desirable to compute "quick indices" based on a small number of items.
- (viii) Not much attention is being paid at present to the question of homogeneity of each sampled commodity, that is, of the comparability of Unit-values over time.
  - (ix) The adjustments for incomplete coverage are being made within the major heads for which index numbers are published. It is desirable to carry out such adjustments within narrower and more homogeneous clusters of commodities.

#### CHAPTER - 3

#### REVISION OF THE EXISTING SERIES: DETAILED RECOMMENDATIONS

After studying in detail the methodology followed for constructing the existing series of index numbers, the Committee felt that this series needed to be replaced by a new series. In order to choose the appropriate methodology for the new series, the Committee kept in view the various limitations of the present series mentioned in Chapter-2 and the practices followed in some of the advanced countries (Vide Annex IV). It also carried out a number of exercises before deciding on certain aspects of the methodology, e.g. the formula to be used for computing the index numbers. The recommendations of the Committee for the methodology to be followed in the new series are given in this chapter, arranged under different heads. The considerations leading to these recommendations are also presented in brief.

# 3.1 Choice of base period:

The base year of the existing series is 1968-69, which is more than a decade old. In view of marked changes in the composition of India's foreign trade, it is necessary to choose a more recent base for constructing the new series. Moreover, the system of commodity classification has undergone a major revision with effect from April, 1977, when the RITC gave way to the ITC-Rev 2. A period earlier than 1977-78 could not obviously be recommended as the base year of the revised series as there are serious

difficulties in matching items in the two systems of classification. The Committee noted that although the ITC-R2 was implemented w.e.f. April 1977, its implementation at the source points (e.g. the Customs Houses) took a long time due to a number of reasons. Also, the statistical personnel at the Customs Houses and at the DGCI&S took some time to get themselves familiarised with the new classification. Therefore, the foreign trade statistics of the year 1977-78 may be prone to errors of classification while the trade data for 1978-79 onwards are found to be quite satisfactory. The year 1978-79 happens to be the latest fiscal year for which the trade data were available to this Committee. The Committee examined the data (especially the unit-values) for the different years and came to the conclusion that the year 1978-79 was not abnormal in any way, at least so far as India's foreign trade is concerned. The Committee therefore, recommends the year 1978-79 as the base year of the सन्धमेव जयत proposed series.

3.1.1. The Committee also recommends that as a matter of policy the base year of the series should be shifted in future broadly at five-year intervals in view of rapid changes that have occurred in the past and are expected to occur in the future in the foreign trade of India. It may be noted that many advanced countries have been following such practice.

## 3.2 <u>Selection of Commodities:</u>

As already stated, the existing commodity baskets consist of 489 commodities in respect of exports and 511

commodities in respect of imports. These baskets have, of course, become outdated with the passage of time and their percentage coverage in the value of total trade has fallen considerably especially for exports (Vide Table 3 in Chapter-I). Moreover, the commodities were classified as per the RITC system and the revised commodity basket must be based on the later ITC-Rev.2 system.

3.2.1 The Committee recommends the two commodity baskets presented in Annexes V & VI for the construction of the new series of index numbers for exports and imports. The total number of commodities selected is 728 in case of exports and 623 in case of imports. The corresponding coverages in the total value of India's foreign trade during 1978-79 are 35 per cent and 86 per cent respectively. The table 4 appended below gives the position for each of the sections of the ITC - Rev. 2, excluding Section 9.

Table: Percentage coverage of the recommended commodity baskets in total value of Indla's trade during 1978-79.

ITC-Rev.2 Sections	Export	S	Impo	Imports		
Sections	No. of sampled commodities	Coverage (%)	No. of sam- pled commodities	Coverage (%)		
1.	2.	3.	4.	5.		
Sec. 0	91	9 <b>7</b>	37	86		
Sec. 1	8	97	1	52		
Sec. 2	66	89	53	1		

# ANNEX - V

LIST OF SAMPLED COMMODITIES AS PER 7-DIGIT OF ITC-REV 2 UNDER EXPORT FOR PROPOSED SERIES (BASE 1978-79 = 100)

# Section: 0

	01 Meat & Meat Preparation	s
0112000		0118901
0118909		
	03 Fish and fish preparati	ons
0341003		0360004
0342003		0360006
0350302	TIME	0360007
03600.01	TWANK	0372001
	A STATE OF THE STA	
	04 Cereals and cereal preparations	
	स्वामन जयते	
0412001		0460100
0412002		0484201
0422102		0488001
0422200		0488002
	054 & 056 Vegetables	
0541002		0561002
0545101		0561003
0545102		0565103
0548103		

# Section: 0 contd.

	057 & 058 Fruits	and nuts
0571100		0579 <b>7</b> 03
0574000		0579704
0577301		0583001
0577302		0585400
0577902		0585701
0577903	CORES .	0586301
0579701		0589101
	061.1 & 061.2 Suga	ar
0612003	071 Coffee	061500 <b>1</b>
0711101		0711105
0711102		0711106
0711103		0712001
0711104		
	074 Tea	
0741001		0741005
0741002		0741006
0741003		0741007
0741004		

the behaviour of unit values over time was examined for an assessment of the degree of homogeneity of the commodities. The Committee's views in this regard were shaped by a careful perusal of the documents received from UK, USA and Canada (Vide Annex IV). In all these countries, great deal of attention is paid to the consideration of homogeneity mentioned above, and the percentage coverage of sampled commodities is sometimes quite low. Thus, the current US indices for exports and imports have a coverage not exceeding 25 per cent for "finished manufactures" in recent years; the overall indices for exports have coverage between 45 and 50 per cent, and those for imports 50 to 65 per cent.

# 3.3. Choice of formula, including choice between fixed base and chain base systems:

With a view to arriving at a decision in these matters the Committee got some exercises carried out by the Indian Institute of Foreign Trade (IIFT), New Delhi. The IIFT had the complete data on India's exports at the commodity-country level, on magnetic tape for each of the years 1968-69 through 1975-76. The Committee requested it, among other things, to compute indices of quantum and Unit-value for all the years on base 1963-69 = 100, separately by Laspeyres, Paasche and Fisher formulae and also on the fixed and the chain base systems. The object was to get some idea of the variation among different formulae and between the fixed and chain base indices, when applied to Indian data. It may be noted that the exercise was based on export statistics only and it was not possible to do any parallel study utilising the statistics of import trade.

Table 5 and 6 set out the most important results of this exercise. Section level indices are not presented for considerations of space.

Table 5: Unit value index numbers (1968-69 = 100) based on 1779 commodities of India's exports computed by different formulae.

Year	Chain base indices			Fixed base indices		
	Laspeyres	Paasche	Fisher	Laspeyres	Paasche	Fisher
1.	2.	3.	4.	5,	6.	7.
1968-69	100	100	100	100	100	100
1969-70	118	103	110	118	103	110
1970-71	123	104	113	113	105	109
1971-72	121	100	110	110	101	106
1972 <b>-7</b> 3	144	113	127	131	118	124
1973-74	181	137 🦠	15 <b>7</b>	158	146	152
1974-75	<b>2</b> 25	177	200	198	179	189
1975-76	236	1 <b>7</b> 5	203	201	195	198
			THIN			

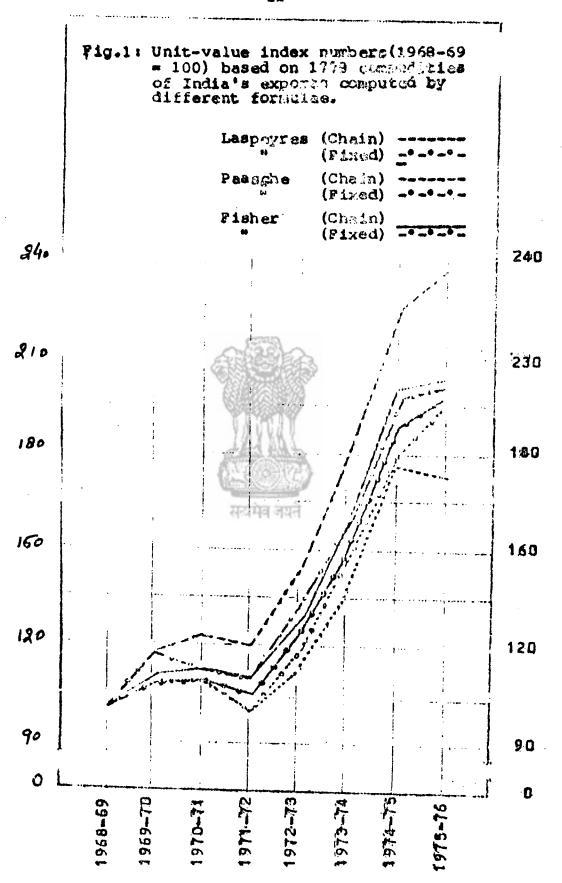
Table 6: Quantum index numbers (1968-69 = 100) based on 1779 commodities of India's emports computed by different formulae.

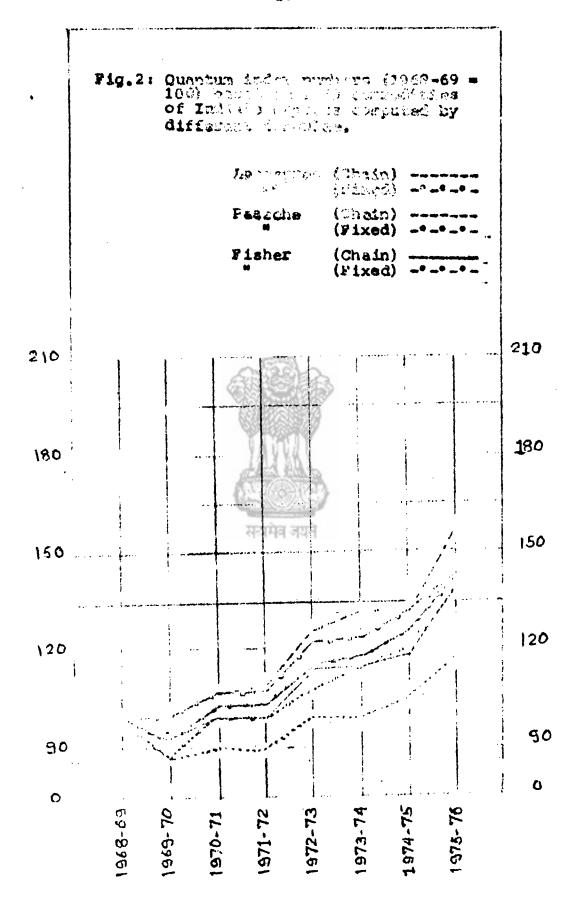
Year	<u>Chain</u> b	ase indic	:0 <b>s</b>	Fixed base indices			
	Laspeyres	Paasche	Fisher	Laspeyres	Paasche	Fisher	
1.	2.	3.	4.	5.	6.	7.	
1968-69	100	100	100	100	100	100	
1969-70	100	87	93	100	<b>9</b> 7	93	
1970-71	107	91	99	107	99	103	
1971-72	109	90	99	108	99	104	

2.	3.	4.	5.	6.	7.	
126	100	113	122	<b>11</b> 0	116	
131	100	115	124	115	119	
132	105	119	132	120	126	
158	118	138	144	140	142	
	126 131 132	126 100 131 100 132 105	126     100     113       131     100     115       132     105     119	126     100     113     122       131     100     115     124       132     105     119     132	126     100     113     122     110       131     100     115     124     115       132     105     119     132     120	126     100     113     122     110     116       131     100     115     124     115     119       132     105     119     132     120     126

3.3.1 The results in Tables 5 and 6 suffer from two serious limitations, if one wants to infer from them the type of differences that would arise if India's indices for export trade were computed in different ways. First, the indices are based on all the 1779 items for which quantity data in unchanging units were available for all the years, and these items included many which would not pass the test of homogeneity. Second, no adjustment was made for excluded items as is made in the construction of the official index numbers. Hence, the results in Tables 5 and 6 should be taken as broadly indicative of the effects of different formulae.

- 3.3. The table shows in a striking manner that the choice of formula had a marked effect on the value recorded by the index number and that, further, if Laspeyres or Paasche formula is used, the difference between fixed base and chain base indices could also be considerable (see also Figs. 1 and 2).
- 3.3.3 Kceping these in view along with the well-known considerations pointing to the advantages of the Fisher formula over Laspeyres' or Paasche's and of the Chain base





system over the fixed base system in a situation where the composition of trade is changing appreciably over the years, the Committee makes the following recommendations:-

- a) Fisher's formulae should be followed for constructing the indices of the new series. The index for Unit-Value should be directly computed while the quantum index number should be derived from it, as at present.
- b) The fixed base system may be adopted if resource proves to be a serious constraint, otherwise the Chain base system should be adopted.
- c) The Laspeyres type quantum indices and Paasche type Unit-value indices should continue to be computed these would not require any extra effort and may be passed on to the CSO for their use.

# 3.4 Adjustment for incomplete coverage:

The Committee examined the existing method for adjustment for incomplete coverage. This is based on the assumption that the Unit-value index computed from the sampled commodities within each homogeneous "block" (i.e., cluster of commodities) is applicable to the aggregate of all (sampled plus non-sampled) commodities of

<sup>4.</sup> It is recognised that the change over from presently used formulae to Fisher's formulae would increase the work-load to some extent, even if the fixed base system be adopted.

that "block". While this approach is entirely reasonable - it is also currently followed in some of the advanced countries - it was felt that at present the number of "blocks" (26 for exports and 27 for imports) is rather too small and the "blocks" not sufficiently homogeneous, for this approach to yield satisfactory results. The Committee recommends that the list of "block" be expanded to ensure greater within-block homogeneity. Annex VII gives the list of 73 "blocks" actually recommended for computation of export indices and the list of 77 "blocks" recommended for computation of import indices.

# 3.5 Format for presentation of Index Numbers:

The Committee recognised that the existing format for presentation of foreign trade index numbers does not allow for sufficient disaggregation and needed elaboration and revision to make the index numbers more useful to economic analysts and policy-makers. It took into account the format used for the official wholesale price index numbers and also the categories mentioned in various documents and publications, e.g. the Economic Survey. Homogeneity of description was, of course, an important criteria, and another was the contribution to total foreign trade of the country.

3.5.1 The Committee finally recommends the two formats presented in Annexes as VIII & IX, one for export indices and the other for import indices. The proposed formats consist of 36 Major heads under exports, as against 26 heads in the existing series, and 41 Major heads under

imports as against 27 in the existing series. The sectional indices should continue to be published in addition to the index numbers for the Major heads.

- 3.5.2 The Committee recognised that besides the index numbers as per proposed format, there may be considerable demand for index numbers for particular items like Cashew nuts or the items under public distribution. Such indices may be constructed separately and furnished to the appropriate Ministries on demand.
- 3.5.3 It was also felt that it would be most useful to have index numbers for economic classes of commodities, say, by stage of processing or by end-use. Such indices are prepared in some of the advanced countries. The Committee, however, felt that such computation is not possible with the existing classification of commodities and any attempt is bound to give only very rough results. The Committee, therefore, recommends that the D.G.C.I. & S. should keep the construction of such indices as a long-term goal and take steps necessary in this regard in consultation with the users.
- 3.5.4 The three types of terms of trade should be computed and published as at present. It is not possible in the existing Indian situation to compute these terms of trade on a balance of payments basis, as is done in UK, in accordance with standard international practice.

#### 3.6 Linking factor:

The Committee recommended that the first monthly index on the new system be computed for April, 1980, while the current series would continue till March '80. Thereafter, only annual indices of the current series would be computed for the years 1979-80 and 1980-81. The final linking factor for extension of the proposed series backwards (Sectionwise etc., to the extent possible) would be derived (by ratio or regression method) from 3 pairs of annual indices, namely, those for the years 1978-79, 1979-80 and 1980-81, of the two series.

3.6.1 The monthly indices of the new series for the year 1979-80 may not be directly computed but may be estimated from the Monthly indices of the existing series using provisional linking factor based on the annual indices for 1978-79 and 1979-80 of the two series and these estimates may be reviewed subsequently when the final linking factor has been obtained. Monthly indices during 1978-79 on the new series may also be estimated, if necessary, in a similar manner.

### 3.7 Quarterly Indices:

Many advanced countries publish quarterly indices in addition to monthly and annual ones. This practice may be adopted in India also. The quarterly indices would tend to be less erratic than monthly figures. The Laspeyres type quarterly indices of quantum and Unit-value may be computed as simple averages of the corresponding monthly

indices. Paasche type quarterly indices of Quantum and Unit-value may thereafter be derived by dividing the quarterly value indices by the appropriate Laspeyres indices. Fisher type quarterly indices for both quantum and Unit-value may: therefore, be computed without much effort.

#### 3.8 Periodic revision of indices incorporating late returns:

One weakness of the existing series of index numbers of foreign trade is that the monthly indices are based on returns which are somewhat incomplete. The annual indices are, however, prepared from relatively complete data. The degree of incompleteness of returns has varied in recent years, being smaller when the delay in data compilation is longer. Table 7 below compares three sets of figures for total value of India's exports and imports for each of the years 1976-77 and 1977-78;

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- total of the values of monthly trade over the twelve months according to returns used for computing monthly indices; (col. 2);
- ii) the annual value of trade as per returns used for computing the annual index (col. 3); and
- iii) final value of trade during the year (col. 4).
- 3.8.1 The percentage differences in the last two columns bear out the comments made above. In any case, the monthly indices and the annual indices are at present inconsistent.

Table 7: Table showing the extent of revision of total value of foreign trade data

(Figures in lakhs)

	Total trade	in Rs.lakhs	Percentage difference		
Year	12-monthly figures	Cumulative figures for the year		$\frac{(2)-(4)}{(4)}$ x	$100 \frac{(3) - (4)}{(4)} \times 100$
1.	2.	3.	4.	5.	6.
		Ехр	o <b>r</b> t s		·
1976-77	45,30,52	49,67,83	51,45,78	12.0	3.5
1977-78	44,49,61	53,63,18	54,04,26	17.7	0.8
1978-79	45,44,88	57,07,67	57,26,26	20.6	0.3
		qmI	orts		
1976-77	44,59,98	50,15,15	50,73,95	12.1	1.2
1977-78	53,39,95	60,26,01	60,25,29	11.4	0.01
1978-79	62,78,03	67,88,64	68,14,30	<b>7.</b> 9	0.4

3.8.2 It may be mentioned that while the <u>final</u> figures for the total value of trade are published at some later date, the itemwise <u>final</u> figures for value and quantum of trade are never released at all.

3.8.3 The Committee examined this question and recommends that:

The monthly and annual indices may be computed and released as at present, and the quarterly indices derived from the monthly indices as suggested above. But, at some later date, when complete returns have become available, revised i.e. final monthly/quarterly/annual indices should be published. The effect of such revision is likely to be small so far as the Unit-value indices are concerned. They may be assumed to need no revision at all; only the quantum indices would be adjusted, dividing the revised or final indices of value of trade by the original indices of Unit-value.

# 3.9 Seasonal adjustment

The Committee observed that some advanced countries were regularly publishing seasonally adjusted index numbers, using, say, the X-11 variant of the US Bureau of the Census Method II seasonal adjustment programme. For the sake of simplicity, the Unit-value indices are generally left unadjusted; and the quantum indices are adjusted either directly by applying the seasonal adjustment programme to these indices or indirectly by adjusting the raw value series and then dividing the adjusted value indices by the original (unadjusted) indices of Unit-value. The Committee recommends that attempts be made to apply such seasonal adjustment programmes to the Indian indices of foreign trade, especially

for classes of commodities markedly affected by seasonal fluctuations. Of course, such exercises must be based on monthly indices that have been revised to take account of late returns. Technical papers may be brought out presenting deseasonalised indices on base 1968-69 = 100 for the past decade or so. So far as the proposed series on base 1978-79 is concerned, such work can be profitably taken up only after indices have been prepared for a few years, but the study on indices of the existing series could throw light on seasonal movements in recent years.

#### 3.10 Bilateral index numbers:

From the policy-makers' point of view, the need for computing bilateral index numbers and the bilateral terms of trade cannot be overemphasised. The Committee was informed that in the past such indices were occasionally computed for a few selected countries. The work was done manually. As the labour of manual computation was extremely heavy, the D.G.C.I. & S at one stage planned to do such work through Unit Record Machines, on a more or less regular basis. The Committee noted that due to shortage of machine hours no progress could be made in implementing this idea. Considering the great importance of bilateral index numbers and bilateral terms of trade, the Committee recommends that such work be taken up on a regular basis and that adequate resources be made available to the DGCI&S.

#### 3.11 Possibility of "Quick" indices:

In view of the existing time lag in the availability of index numbers, the Committee explored the possibility of constructing "quick indices" based on a small number of items, which could be brought out within a Some exercises were carried out through the few months. IIFT at New Delhi. The results of these exercises are presented in Annex X. In the main, this annex gives the index numbers of Unit-value and quantum of India's export trade, based on the 50 most important commodities, separately for the years 1969-70 through 1975-76 with years 1968-69 as base. As explained in the annex, these indices need not agree very closely with those of the existing series. For one thing, no adjustment for incomplete coverage was made in computing these "guick indices". Nevertheless, the results seemed to be encouraging in the sense that year-to-year changes seemed to be measured fairly well on the basis of a sample of 50 items. The Committee, however, noted that the special compilation of data for even 50 commodities would involve the handling of practically all the records. The idea of a quick index does not seem to be feasible unless an economical scheme of sampling the records is worked out and proves to be satisfactory. With the limited time at its disposal, the Committee could not pursue the matter further.

# 3.12 Scrutiny of unit values and specification prices:

From the documents received from the advanced countries (<u>Vide</u> Annex IV) the Committee felt that these countries

were continually checking the Unit-values, studying their time trends, comparing them with quotations from other sources etc., with a view to ensuring the homogeneity and intertemporal comparability of the itemwise data. Much use is made in this connection of "specification prices", which are prices quoted for a detailed commodity specification. The commodity specification is typically held constant over time with respect to physical description and terms of sale (e.g. size of transaction, type of customer and credit terms). In Canada, the official indices of foreign trade are based on unit values for relatively homogeneous commodities and (proxy) specification prices (mainly wholesale prices from domestic and foreign sources) for heterogeneous commodities. ral Republic of Germany and Japan both types of indices are computed. The USA compiles, in addition to Unitvalue indices, specification prices indices, which according for about one thirds of the value of their exports but only 14% of their imports. In some countries indices are based on data for commodity-country cells; obviously such data would be more homogeneous than commoditywise data totalled over all countries.

3.12.1 The Committee deliberated at length on the problem of homogeneity of selected commodities, and the associated problem of technical changes in the commodities over time. In the limited time at its disposal it could do nothing to identify sources of "Specification prices" which could be used as checks on or supplementary to the Unit-values derived from foreign trade statistics.

3.12.2 To give an idea of the magnitude of fluctuations in Unitvalues over time, presumably owing to heterogeneity of the commodities, the Unit-values for some sample commodities of the existing series are shown in Table 8 below for the years 1968-69 to
1975-76. It will be seen that Unit-values fluctuate very widely
from year to year. Obviously, index numbers based on such data
are very crude.

Table 8: Unit-Values of specific sampled commodities as per RITC - Codes

Code (sample)	1968-69	1969-70	1970-71	1971-72	1972 <b>-7</b> 3	1973-74	1974-75	1975 <b>-</b> 76
7143002	708	2278	2502	3997	1369	<b>5</b> 396	25428	35334
7158201	13492	<b>6</b> 476	26784	83383	1996	11515	16422	76 300
7171506	276 982	49175	122250	49577	274537	4107	1013	L <b>791</b> 60
7185103	11206	6316	2656	8900	20990	8701	8323	6582
7191503	1505	839	837	10888	855	851	2681	1343

(Unit-Values are in Rs. per unit as per RITC)

3.12.3 The Committee recommends that a special cell be started in the D.G.C.I. & S. for carrying on technical studies for scrutinizing the Unit-values of sampled commodities and for locating and utilizing suitable specification prices of items entering India's foreign trade.

#### 3.13 Reduction of time-lag and problem of resources:

As already mentioned in Chapter 2, the time-lag in the availability of the index numbers is currently about a year. But this is almost entirely due to the delay in the receipt of primary data from Customs and in the compilation of export and import trade statistics at the DGCI&S. Only about 4 weeks are taken for manual computation of the index numbers for a given month once the commoditywise quantity and value data have become available. On occasions, the limited staff engaged in manual computation of index numbers are diverted to other special computations, resulting in further delays. The Committee is aware that another committee is currently looking into the problem. Nevertheless, it cannot help urging that some positive steps to cut down the delays must be taken. may be noted that in UK the trade statistics as well as the index numbers are published within a fortnight of the end of the month to which the figures relate. inevitably linked up with the question of resources and the Committee recommends that the DGCI&S be given adequate resources to speed up the work and to take up the various additional items of work suggested in this report. The implementation of the new series of index numbers on base 1978-79 using Fisher's formula (fixed base) would in itself require a number of extra hands for manual computation. these are not provided, the backlog would go on accumulating.

#### CHAPTER - 4

#### SUMMARY OF RECOMMENDATIONS

4.1 For the sake of convenience, the recommendations made in the preceding chapter are presented here, very briefly. References are made to the corresponding paragraphs in chapter 3.

#### 4.2 Choice of base period

The Committee recommends the year 1978-79 as the base year of the revised series (sub para 3.1.0).

4.2.1 The Committee also recommends that as a matter of policy the base year of the series should be shifted in future broadly at five-year intervals (sub para 3.1.1).

#### 4.3 Selection of Commodities

The Committee recommends the two commodity baskets for the construction of the new series of index numbers presented in Annexes V and VI respectively for exports and imports. The total number of commodities selected is 728 in the case of exports and 623 in the case of imports (sub para 3.2.1).

# 4.4 Choice of formula including choice between fixed base and chain base systems.

Fisher's formula should be followed for constructing the indices of new series. The index for Unit-value should be directly computed while the quantum index should be derived from it, as at present (sub para 3.3.3(a)).

4.4.1 The fixed base system may be adopted if resource proves to be a serious constaint, otherwise the chain base system should be adopted (sub para 3.3.3(b)).

4.4.2 The Laspeyres type quantum indices and Paasche type unit value indices should continue to be computed. (sub para 3.3.3 (c)).

#### 4.5 Adjustment for incomplete coverage

The Committee recommends that for adjustment of incomplete coverage the existing lists of "blocks" (i.e. clusters of commodities) be expanded to ensure greater within block homogeneity. Annex VII gives the list of 73 "blocks" actually recommended for computation of export indices, and the list of 77 "blocks" recommended for computation of import indices (para 3.4).

### 4.6 Format for presentation of index numbers

The Committee recommends the two formats presented in Annexes VIII and IX, one for export indices (consisting of 36 major heads) and the other for import indices (having 41 major heads). The sectional indices should also be published in addition to the index numbers for the major heads (sub para 3.5.1).

- 4.6.1 Indices for particular items like cashewnuts or items under public distribution may be separately constructed and furnished to the appropriate Ministries on demand (sub para 3.5.2).
- 4.6.2 The D.G.C.I. & S. should keep the construction of index numbers for economic classes of commodities (say, by stage of processing or by end-use) as a long-term goal (sub para 3.5.3).

4.6.3 The three types of terms of trade should be computed and published as at present (sub para 3.5.4).

#### 4.7 Implementation of new series & Linking factor

The first monthly index on the new system should be computed for April 1980, while the current monthly series should continue till March 1980 (para 3.6).

- 4.7.1 Annual indices of the current series should be computed for the years 1979-80 and 1980-81. The final linking factor for extension of the new series backwards (sectionwise etc., to the extent possible) would be derived, by ratio or regression method, from 3 pairs of annual indices, viz. those for the years 1978-79, 1979-80 and 1980-81 of the two series. A provisional linking factor may be obtained using the indices for 1978-79 and 1979-80 (para 3.6 and sub para 3.6.1).
- 4.7.2 The monthly indices of the new series during 1979-80 (or during 1978-79) may be estimated from those of the existing series using the provisional/final linking factor (sub para 3.6.1).

#### 4.8 Quarterly indices

Quarterly indices may be published in addition to monthly and annual indices. These may be derived from the monthly indices without much effort (para 3.7).

# 4.9 <u>Periodic revision of indices incorporating late</u> returns

The Committee recommends that <u>revised</u> monthly, quarterly and annual indices should be published at some later date when complete returns have become available. The Unit-value indices need not be revised at all, and only the quantum indices would have to be adjusted (sub para 3.8.3).

#### 4.10 Seasonal adjustment

The Committee recommends that attempts be made to apply seasonal adjustment programs to the monthly indices of foreign trade and to bring out technical papers containing seasonally adjusted index numbers.

#### 4.11 Bilateral index numbers

The Committee recommends that the computation of bilateral index numbers and of bilateral terms of trade be taken up on a regular basis and that adequate resources be made available to the DGCI&S (para 3.10).

#### 4.12 Scrutiny of unit values and specification prices

The Committee recommends that a special cell be started in the DGCI&S for carrying on technical studies for scrutinizing the unit values of the sampled commodities and for locating and utilizing suitable specification prices of commodities entering India's foreign trade (sub para 3.12.3).

#### 4.13 Reduction of time-lag and problem of resources

The Committee urges that some positive steps be taken to cut down the time-lag in the availability of the index numbers. The Committee recommends that the DGCI&S be given adequate resources to speed up the work and to take up the various additional items of work suggested in this report. (para 3.13).



#### CHAPTER - 5

#### ACKNOWLEDGEMENTS

The Committee could not have discharged its responsibility without the valuable co-operation from many institutions and individuals, and it would like to record its appreciation of the help received from them.

5.0.1 The Committee is thankful to Mr. D.G. Elis Williams, Department of Industry and Trade, London (UK); Dr. Vincent P. Barbara, Director, Bureau of the Census, US Department of Commerce, Washington D.C. (USA); Dr. Yvon Goulet, Director, External Trade Division, Statistics Canada, Ottawa, Ontario (Canada); Dr. Pauli, Statistisches Bundesamt, Wiesbaden (Federal Republic of Germany); and Mr. S. Tanahashi, First Secretary (Commercial), Embassy of Japan at New Delhi for sending highly instructive documents on the methodology followed in their respective countries. The Committee's work was greatly facilitated by a perusal of these documents.

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5.0.2 At the request of the Committee, the Indian Institute of Foreign Trade (IIFT), New Delhi carried out a number of exercises utilizing the commodity-cumcountry export data for the years 1968-69 through 1975-76 which was available on magnetic tape. The exercises were done on the computer of the Planning Commission. The results of these exercises played a vital role in the deliberations of the Committee. The Committee wishes to record its appreciation of the services rendered by the IIFT as also by the Computer Centre of the Planning Commission. Thanks are particularly due to Shri S.K.Ghosh,

Chief, Statistics and Shri S.K. Rao, Assistant Chief, Statistics of the IIFT and to Shri D.D. Kanojia, Senior Programmer of the Computer Centre of the Planning Commission.

5.0.3 The Office of the DGCIAS naturally served as the Secretariat of the Committee. Shri M.C. Mookerjee, Senior Dy. Director General, CI&S, was looking after the work of DGCI&S when the Committee's work started. The Committee is thankful to Shri M.C. Mookerjee for his participation and helpful suggestions in the first two meetings of the Committee and for his help in the initial stages of the Committee's work. Shri S.K. Nath, Deputy Director General, CI&S, in charge of the Index Number Section, attended all the meetings of the Committee and assisted at every stage with his intimate knowledge of the various issues discussed by the Committee. He rendered valuable assistance in carrying out all the exercises undertaken by the Committee including the selection of the commodity-baskets for the proposed series, and also in drafting the report of the Committee. The Committee is glad to express its deep appreciation of the services rendered by Shri S.K. Nath. Thanks are particularly due to the following members of the staff of the DGCI&S office: Shri Amiya Das, Shri C.R. Banerjee, Shri Nagen Roy and Shri B.N. Ghose who assisted at the various stages in carrying out the exercises.

sd/-(N.Bhattacharya) Chairman

sd/-(S.V. Rao) Member sd/-(V. Agnihotri) Member

sd/-(A.S. Prakasa Rao) Member

sd/-(D.C. Datta) Member-Secretary

December 1980

#### PRESENT FORMAT FOR F-UBLICATION OF CURRENT INDEX NUMBER OF FOREIGN TRADE OF INDIA WITH BASE 1968 - 69 = 100

Commodity	heads	(as	per	RITC)
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#### EXPORT

#### IMPORT

Section: 0 - Food

Fish & fish preparations

Fruits & Vegetables

Sugar, Sugar preparations & honey

Coffee

Tea and Mate

Spices

Oilseed Cake

Section: 0 - Food

Dairy Products & eggs

Cereals & cereal preparations

Fruits & Vegetables

Section: 1 - Beverages & Tobacco

Section: 1-Beverages & Tobacco

Section : 2 - Crude materials, inedible except fuels

Hides, skins & fur skins undressed

Wool and other animal hair

Cotton

Crude fertilisers & minerals excld. coal, petroleum crude etc

Metalliferous ores & metal scrap Crude animal & vegetable materials

Section : 2-Crude materials, inedible except fuels

Pulp and waste paper

Wool and other animal hair

Cotton

Crude fertilisers & minerals excld. coal, petroleum crude

etc.

Jute

Section: 3 - Mineral fuels & lubricants

Coal, coke and briquettes

Section: 4 - Animal & Vegetable Oils & Fats

Fixed vegetable oils and fats

Section : 3-Mineral fuels & lubricants

Petroleum crude etc.

Section : 4-Animal & Vegetable

Oils & fats

Commodity head	ds (as per RITC)
EXPORT	IMPORT
Section : 5 - Chemicals	Section : 5-Chemicals
	Chemical elements & compound
	Dyeing, tanning & colouring materials
· ·	Fertilisers manufactured
	Plastic materials regenered
Section: 6 - Manufactured goods Classified chiefly by materials	Section: 6-Manufactured goods Classified chiefly by materials
Leather & manufactures thereof	Paper, paper board etc.
Textile yarn & thread	Textile yarn, fabrics etc.
Textile fabrics, woven (other than cotton & Jute)	
Floor coverings	77
Cotton manufactures (excld. yarn and thread and clothing)	
Jute manufactures (excld. twist and yarn)	जयते
Iron and Steel	Iron and Steel
	Copper
	Nickel
Non-ferrous metals	Aluminium
	Lead
	Zinc
	Tin

Manufactures of metals

Manufactures of metals

Commodity heads (as per RITC)				
EXPORT	IMPORT			
Section: 7 - Machinery & Transport equipment	Section: 7-Machinery & Transport equipment			
	Machinery other than electric			
	Electric machinery etc.			
	Transport equipment			
Section: 8 - Misc. Manufactured Articles	Section: 8-Misc. Manufactured Articles			
Clothing etc.	14			
Footwear	A.V.			
सन्यमेव	Professional Scientific instruments etc.			
General Index Number	General Index Number			

#### ANNEX - II

To be published in Part I Section I of the Gazette of India

No.4(10)/80-EPL
Government of India
Ministry of Commerce & Civil Supplies
Department of Commerce

New Delhi, the 5th June, 1980

#### RESOLUTION

Over the last ten years, India's foreign trade has changed considerably and our present methodology of quantification, specially in the construction of Index numbers that is meant to indicate the trends, e.g., growth in volume of trade, changes in terms of trade, changes in unit value etc. is proving inadequate for providing correct estimates for the coming decade.

In order to re-examine these issues on an analytical and technical level and to revise the base year for the computation of foreign trade indices, the Govt. of India hereby constitutes a Technical Committee. The composition of the Committee will be as follows:-

- 1. Prof. N. Bhattacharya, ...Chairman Professor of Economics, Indian Statistical Institute Calcutta 203, B.T. Road, Calcutta-36.
- 2. Shri A.S. Prakasa Rao, Joint Director ...Member C.S.O., Sarder Patel Bhavan Parliament Street, New Delhi-110001.
- 3. Dr. V. Agnihotri, ...Member
  Addl. Economic Adviser,
  Ministry of Commerce,
  Udyog Bhavan, New Delhi 110011.

- 4. Dr. S.V. Rao
  Chief, International Trade Division
  Planning Commission
  Yojna Bhavan, New Delhi 110001.
- 5. Director General
  Commercial Intelligence and
  Statistics
  1, Council House Street
  Calcutta-1.

.. Member-Secretary

The terms of reference of the Committee will be as follows:-

- 1. To improve the current methodology of computing indices of foreign trade statistics of India.
- 2. To revise the base year for the computation of foreign trade indices.

The Committee would submit its report in four months.

Sd/- M.L.Kapur Joint Director

#### ORDER

Ordered that a copy of the Resolution be communicated to all concerned Ministries/Deptts. of the Govt. of India.

Ordered also that the Resolution be published in the Gazette of India for general information.

Sd/- M.L.Kapur Joint Director

#### ANNEX - III

#### TO BE PUBLISHED IN PART 1 SECTION I OF THE GAZETTE OF INDIA

No.4(10)/80-EPL Government of India Ministry of Commerce Department of Commerce

New Delhi, the 12th November, 1980.

#### RESOLUTION

Reference is invited to this Ministry's Resolution No.4(10)/80-EPL dated the 5th June, 1980 constituting a technical committee to (i) improve the current methodology of computing indices of foreign trade statistics of India and (ii) revise the base year for the computation of foreign trade indices.

The Committee was required to submit its report in four months time i.e. by October, 1980. As the Committee has not yet completed its deliberations, it has been decided to extend the term of the Committee by another two months.

The terms of reference and the composition of the Committee will remain unchanged.

Sd/- M.L. Kapur Joint Director

Ordered that a copy of the resolution be communicated to all concerned Ministries/Deptt. of the Government of India.

Ordered also that the Resolution be published in the Gazette of India for general information.

Sd/-M.L. Kapur Joint Director

#### METHODOLOGY FOLLOWED IN SOME DEVELOPED COUNTRIES

- 1. The present Committee requested the official agencies in several countries for information on methodology followed for constructing index numbers of foreign trade, and received in response to its request a number of documents outlining such methodologies. The following gives a brief description of the procedures adopted in these countries in so far as they have a bearing on the task before the present Committee. Only bare outlines were available for Japan and West Germany and these are presented in paragraphs 2 and 3. Greater details for UK, Canada and USA are given in paragraphs 4, 5 and 6.
- 2. Japan: The index numbers are based on 1961 items for exports and 610 items for imports. Indices are currently published with base 1975. Fisher's formula is used for computing unit value indices (on the fixed base system). The quantum indices are obtained by dividing the value indices by the unit value indices. Indices are obtained every month and also on annual basis. Exports are valued at the f.o.b. transaction values and imports at c.i.f. rates. The indices are prepared for the following categories of items besides for a large number of finer classes.

Exports: food stuff, textiles, chemicals, non-metallic minerals and manufactures, metals, machinery & equipment, miscellaneous; and also for a special classification viz. food stuff, raw materials and manufactures.

Imports: food stuff, textiles materials, metallic materials, raw materials, n.e.s., mineral fuels, chemicals, machinery & equipment, miscellaneous; and also for a special classification viz. food stuff, raw materials, mineral fuels and manufactures. Indices for specification prices are also computed separately.

Source: Materials received from Mr. S. Tanahashi, First Secretary (Commercial), Embassy of Japan at New Delhi.

3. West Germany: The current base year is 1976. Previous series had 1962 and then 1970 as bases. The next base year is likely to be 1980. The volume index is of the Laspeyres type, and the unit value index of Passche type. The index

computation uses commoditywise data separately for "EC countries" and "other countries". Adjustments for excluded items made in a manner similar to the Indian procedure. It is recognised the Paasche type index is not strictly comparable between different periods. Indices are also prepared for some economic classes e.g. investment goods and consumption goods. Separate indices are also computed for specification prices.

Source: Materials received from Dr. Pauli, Statistisches Bundesamt, Wiesbaden, Federal Republic of Germany.

- 4. The United Kingdom: The base is 1975 at present, and was 1970 in the previous series. It is intended to choose 1980 as the next base. Index numbers are calculated monthly and on annual basis. Quarterly unit value and volume indices are calculated as the simple average of the three months. The index numbers are published within a fortnight of the end of the month to which the figures relate. Indices of total trade are also compiled on a balance of payments basis after applying certain adjustments to the Overseas Trade Statistics data. The terms of trade are defined in accordance with standard international practice as the ratio, expressed in index form, of the unit value index for exports to that for imports, both indices being on a balance of payments basis.
- 4.1 First estimates of the annual indices may be revised, and the first estimates as well as the revised estimates incorporate amendments to the values and quantities for the months. In practice, the monthly unit value and volume indices are adjusted to average out to the annual indices.
- 4.2 The unit value indices are Laspeyres indices. For "headings" (items) not in the sample, suitable assumptions about price movements are made. In most cases, unit values of non-selected headings are assumed to move with those of the selected headings. The volume indices are also of the Laspeyres type, they are derived for each "block" by deflating the total value of trade by a Paasche index of unit value. As the composition of trade changes relatively slowly, the products of changes in the unit value and volume indices generally approximates to the changes in the value of trade between one month and the next. It is mentioned that the Paasche type unit value

indices lead to considerable difficulties in interpretation particularly of the month to month movements in the unit value index where the weighting pattern is changing monthly.

- 4.3 For some commodity groups quantity indicators are not quite satisfactory and indices derived from the data are likely to underestimate the rise in volume and overestimate the increase in price since the crude quantity measures take account of quality changes. Wherever possible, units of quantity are used which take account of performance of the machinery e.g. horsepower and size-class of cars and engines.
- 4.4 When a 'line' is not strictly homogeneous, implausible unit values can occur owing for example, to a change in commodity composition of the line or to a change in the source of imports. Such unit values are sometimes "smoothed" and any change (rise or fall) larger than some specified amount is treated as part of quantity movement, and the quantity figure is adjusted accordingly.
- 4.5 Calculations are based on lines (each line being one or more tariff headings) of adequate homogeneity for which the quantities and unit values seem to be comparable over time, and for which the value in 1975 trade was not too small. The lowest level of aggregation at which indices can be produced is called the block. In the 1975-based series for both exports and imports the number of blocks was 93 for the indices for 1978, and the corresponding number of lines was 798 for exports and 88 for imports. The selected headings cover 56% of the total value of exports and 64% of the total value of imports in the year 1978.
- 4.6 The coverage (percentage of value) of headings directly used in the index calculations in the 1970-based series was as follows in the trade of the year 1973:-

Exports		Imports	
Category	Coverage(%)	Category Cov	verage(%
Non-Manufactured goods	84.3	food, beverages and tobacco	88.1
food, beverages and tobacco	a 83 <b>.</b> 0	fuels	96.9
Basic materials	78.9	industrial materials	•
fuels	93.9	basic materials	85.8
Manufactured goods	58.7	Chemicals	48.5
Chemicals	45.2	other semi-manu-	
textiles	80.1	factures	63.8
metals	78.5	finished manufacture	s 51 <b>.</b> 2
machinery and trans port equipment	5 <b>-</b> 66 <b>.</b> 8	manufactured goods	55 <b>.7</b>
others	34.6	\	
Total	60.6	Total	70.0
	सन्यमेव जयते		

4.7 Indices are prepared separately for the following categories of goods:

Exports: Non-manufactured goods, particularly food, beverages and tobacco, basic materials: manufactured goods particularly chemicals, metals, textiles, machinery and transport equipment, others.

Imports: food, beverages and tobacco, fuels: industrial materials particularly basic materials, chemicals, other semi-manufactures, finished manufactures.

- 4.8 The value figures of overseas trade are seasonally adjusted using the multiplicative version of the X-11 variant of the US Bureau of the Census Method II. The seasonally adjusted volume index can be obtained by deflating the seasonally adjusted value figures by the Paasche type unit value index. It is assumed that the unit value index series is not affected by seasonal influences, although this is not completely realistic.
- 4.9 Much of the computation has been mechanized. It may therefore be possible to mechanise the "smoothing" of unit values and to construct indices for different geographical or economic areas. The use of detailed commodity/country data might reduce the extent of heterogeneity in selected headings.

Source: Materials received from Mr. D.G. Elis Williams, Department of Industry and Trade, London (UK). These included the following articles: i) United Kingdom Overseas trade: unit value and volume index numbers and the terms of trade 1970-75, By R. Sellwood. Economic Trends, No.258, April 1975. ii) United Kingdom Overseas trade unit value and volume index numbers and the terms of trade. By A.R. Hewer. Economic Trends, No. 311, September 1979.

The base of the existing series is 1971. The Canada: previous base was 1968. The price index is of the Paasche type; it was Laspeyres for the previous years. The volume index (of Laspeyres type) is obtained by dividing the value index by the price index. (Actually 36% of Canadian imports and 15% of exports are recorded in terms of value only, and for a variety of reasons, no corresponding quantity information is tabulated). It is pointed out that in the System of National Accounts, change in GNP in real terms is studied through Laspeyres type indices, and therefore the implicit GNP deflator is a Passche price index. Consequently, indices of exports and imports used in GNP statistics are of the Laspayres volume and Paasche price type. However, changes in the Paasche price index are partly due to changes in the weights attached to the price relatives. It is likely to be more volatile than the Laspeyres index.

- 5.1 The export and import price indices are based on unit values obtained from the trade statistics and specification prices from Canadian and foreign sources. (proxy) specification prices (collected from a sample of respondents) refer to a particular physical description and terms of sale, e.g. size of transaction, type of customer and credit terms. As unit values may not remain comparable over long periods because of technical or market changes, unit values are used for relatively homogeneous commodities (e.g. primary and semi-manufactured goods) and specification prices (mainly wholesale prices) are used for heterogeneous commodities, especially manufactured products for final use. Most of the specification price indices used for imports are taken from US Bureau of Labour Statistics wholesale price indices. Advantages and disadvantages of specification price indices are recognised and it is noted that most countries base their trade price indexes on unit value prices alone. However, West Germany, Japan and USA also make use of specification prices.
- 5.2 Selection of commodities for price relatives based on unit value is guided by importance of the commodity (i.e. its share in trade) and the evidence that changes in unit value primarily reflect price changes. (The latter was based on detailed examination of time trends). The list of selected price indicators is continually reviewed.
- 5.3 Occasionally, out of line unit values which cannot be explained are not accepted until further confirmation. Revisions are sometimes made of the value data and also of the indices.
- 5.4 Indices are available on a monthly basis for section I to V. The Paasche price indices are also available on a quarterly basis for 20 commodity groups for imports and 23 for exports.
- 5.5 The commodity coverage (%) of the index numbers for

imports and exports is as follows:-

	Live animals	Food, beve- rages & tobacco	materials,	fabricated materials, inedible	Product inedible	Total
		I	MPORTS			
Unit Values	56.1	76.00	88.0	40.0	-	22.7
Speci- fication indices	n 6.4		1.3	14.1	76.8	50.5
	62.5	76.0	90.1	54.1	76.8	73.2
Unit	# # # # # # # # # #	<u>E</u>	XPORTS			
Values	74.4	93.5	90.1	86.6	-	57.1
Speci- fication indices	n _	<b></b>	स्यामेन जयते		81.8	29.2
======	74.4 =======	93.5	90.1	86.6	81.8	86.3

.5.6 Seasonally adjusted volume indices are published regularly. These are derived by deflating the raw value series by the raw Paasche price index and seasonally adjusting the result using the U.S. Bureau of the Census X-II seasonal adjustment programme.

Source: Materials sent by Dr. Yuon Goulet, Director, External Trade Division, Statistics Canada, Ottawa, Ontario, Canada. These included the publication entitled. "The 1971-based price and Volume Indices of Canada's External Trade" of the Statistics Canada dated December, 1976.

- 6. <u>USA</u>: Quantity, unit value and value indices are published for overall export and import trade, for each of five economic classes, viz. crude foods, manufactured foods, crude (nonfood) materials, semi-manufactures and finished manufactures, for exports of "manufactured goods" under category of the Standard International Trade Classification (SITC) and for major end-use classes. The base period is 1967. The unit value indices are constructed by Fisher's ideal formula on the (annual) chain base system, and quantity indices are derived dividing the value indices by corresponding unit value indices.
- 6.1 The indices are computed for every month, quarter and year. Monthly and annual indices are calculated through the formulae mentioned. The quarterly index numbers for quantity are obtained as simple arithmetic averages of the separate monthly indices, the quarterly indices of unit value are then obtained by dividing the quarterly value index by the quarterly index of quantity.
- 6.2 The basic data used are the commodity-by-country statistics of quantity and value of exports and imports. Actually, selected samples of commodities and commodity-country cells enter the computations directly. The selected samples generally include the leadings individual products besides a variety of smaller typical items. The selections are limited especially for finished manufactures by insufficient homogeneity within the most detailed statistical classes for many commodities and by non-availability of quantity measures for many others. The sample is updated every year by adding items as improved data become available or new products enter the trade, any by deleting items as they lose importance.
- 6.3 The percentage coverage of sample commodities directly entering the index computations has been as follows in recent years:

	Total	Crude materials	Crude foods	Manufac tured foods	- Semi- Mfrs.	Finished Mfrs.
Exports, excld. military grant-in -aid	45-50	88 <b>–</b> 93	94 <b>-9</b> 6	50 <b>–</b> 70	50-60	15-25
Imports	50-65	62-80	80-85	65 <b>–7</b> 0	62 <b>-7</b> 0	23-25

- 6.4 The range of commodities is divided into about 125 weighting groups and for each group it is assumed that the average relative price charge for non-samples commodities equals the weighted average for the sample items.
- 6.5 For some important commodities, before the index is computed the unit value relative is <u>adjusted</u> using a linear regression equation relating to average unit value for the commodity to the corresponding average unit shipping weight. The aim of the <u>adjustment</u> is to eliminate the effect of variation in average unit shipping weight between the two periods compared.
- 6.6 It is recognized that the restriction on sample selection due to heterogeneous content of numerous commodity classes limits the coverage and representativeness of the samples. Even the selected samples often lack homogeneity and therefore do not measure price changes in a reliable manner. The indices for finished manufactures are most severely limited, and here especially, the monthly indices should be observed or averaged over three months or more to reduce the effect of erratic movements caused by lack of sample coverage and lack of homogeneity within sample commodities. It is also noted that some distortions may arise from the practice of certain shippers, permissible in some cases by the statistical regulations, of entering on the customs documents values different from actual market valuations.

6.7 Regarding the five economic classes mentioned above, it may be noted that the two "crude" classes mainly include products of farms, fisheries, forests and mines, prior to processing in manufacturing establishments, but a few of the items, such as hides and skins and stemmed tobacco, may also be outputs of manufacturing. "Semi manufactures" are non-food manufactured materials in the earlier stages of processing, while "finished manufactures" generally include highly processed bulk materials and components and products fabricated from them, being a broader category than final-use (capital and consumer) goods.

Source: Materials received from Dr. Vincent P. Barbarn, Director, Bureau of the Census, US Department of Commerce, Washington D.C.



#### ANNEX - V

LIST OF SAMPLED COMMODITIES AS PER 7-DIGIT OF ITC-REV 2 UNDER EXPORT FOR PROPOSED SERIES (BASE 1978-79 = 100)

#### Section: 0

	01 Meat & Meat Preparation	<u>s</u>
0112000		0118901
0118909		
	03 Fish and fish preparati	ons
0341003		0360004
034200 <b>3</b>		0360006
0350302	W 10	0360007
0360001	7.M.VR.A.T	0372001
	44 CA 54 CA	
	04 Cereals and cereal preparations	
	सद्यमेव जयते	
0412001		0460100
0412002		0484201
0422102		0488001
0422200		0488002
	054 & 056 Vegetables	
0541002		0561002
0545101		0561003
0545102		0565103
0548103		

### Section: 0 contd.

057 &	058	Fruits	and	nuts

	0579703
	0579704
	0583001
	0585400
	0585701
	0586301
	0589101
061.1 & 061.2 Sugar	
MW	061500 <b>1</b>
<u>071 Coffee</u>	
	0711105
	0711106
	0712001
074 Tea	
	0741005
	0741006
	0741007
	071 Coffee

### Section: 0 contd.

### 075 Spices

0751001		0752507
0751002		0 <b>7</b> 52508
0751003		0 <b>7</b> 5260 <b>1</b>
075100 <b>5</b>		0752602
0752403		0752603
0752404	COME	0752801
0752405	ANDREAM	0752800
0752406		0752803
0752504		0752806
	YA ITAT	0752807
	081.3 Oilseed Ca	<u>ke</u>
0813102	सत्यमेव जयते	0813402
0813103		0813602
0813202		0813906
0813301		0813908
0813302		
	Residuary items	under
0012200		0812101
0615001		0814201
0723200		0819901
0730002		0980200

#### Section: 1

## 12 Tobacco and Tobacco Manufactures

	•
1211001	1212904
1211100	1222000
1211902	1223002
1212100	
1212903	

#### Section: 2

263 Raw cotton

2631101	White	2633201
2631109	THINT	2633203
2633101		

26 Excl. 263 Textiles fibres and wastes

2614201	2685901
2640001	

# 27 Excl. 271 Minerals (Excl. coal, petroleum etc.)

2731302	2785231
2731303	2785255
2782103	2789201
2785201	2789202
2785208	2789304
2785219	

#### Section: 2 contd.

#### 281 Iron ore and concentrate

2815001	<b>2815</b> 004
2815002	2816001
2815003	

# 287 Ores and concentrated of base metals n.e.s.

	Christophy and Alexander	
2871100		2877006
2873201	THATIY	2879101
2877001	TATAT	2879104
2877003	AT COLOR	2879301
2877004		
2877005	सन्यमव जयत	

# 29 Crude animals and vegetable materials n.e.s.

2911	101	2919402
2911:	102	2922101
2911	103	2922102
2911	601	2922105
2919	201	2922207
2919	301	2922232
2919	401	2922245

### Section: 2 contd. Residuary (Section-2) सत्यमेव जयते Section: 3 322 Coal 334 Petroleum Product

#### Section: 4

#### Sec. 4 Animal and vegetable oils and waxes

4242000	4249006
4245000	4311002
4249001	4312002
4249004	

### Section: 5

# Sec.5 Chemicals and related products

V (V, 1) G (J 1)	
13/13/2/1/2	5232212
	5233102
	5312201
सन्यमेव जयते	5312251
	5313101
	5315331
	5316014
	5318131
	5318141
	5318142
	5318151
	5319200
	<b>5331</b> 005
	5334206
	5334207
	सन्यमेव जयने

### Section: 5

5414002		5513047
5414018		55 30025
5414022		5530051
5417986		5541013
5417987		5542001
5513018		5722001
5513025	Grand -	5983101

#### Section: 6

# 611 and 612 Leather and leather manufactures

	## 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
6113002		6114022
6113004	सन्यमेव जयते	6114039
6113006		6115002
6113007		<b>611</b> 5005
6113009		6115009
6114002		6116101
6114003		6116102
6114004		6116103
6114005		6116104
6114019		6116105

### Section: 6 contd.

611 and	612	Leather	and
leather	manu:	factures	

		•
6116107		6122000
6116108		6123003
6116109		6123005
6116929		
	651 Textile yarn	
	(4) (4)	
6513101	TO STATE	6513222
6513102	TATIVE	6513324
6513103	AF CONTA	6513601
6513121		6517112
6513122	सत्यमेव जयते	6519801
6513123		6519903
	652 Cotton fabrics wowe	<u>n</u>
652 <b>1617</b>		6522406
652 <b>1621</b>		6522412
6521624		6522453
6521707		6522454
6521717		6522456
6522201		6522461
6522404		6522603

### Section: 6 contd.

# 652 Cotton fabrics woven. contd.

6522608		6522658
6522611		6522662
6522623		652266 <b>3</b>
6522624		6522708
6522645		6522751
6522646		
6522647	会影響場合	
6522651		
	CONTROL OF THE PARTY OF THE PAR	

# 653 & 654 Textile fabrics other than cotton

	Management Annual Control of the Con	
6531400	सत्यमेव जयते	6535618
6531501	Alexandra and all all all all all all all all all al	6536005
6531601		6539801
6531602		6 <b>5</b> 4100 <b>1</b>
6531604		6541002
6532000		6541003
6535400		6541005
6535514		6541007
6535518		6545001
6535521		6545002
6535522		6545009
6535614		6545011

# 658 Made-up articles of textiles materials

658 <b>1002</b>		6584803
6581003		6584804
6581004		6584805
6581005	-man	6584812
6581006	412	6584814
658 <b>1</b> 00 <b>7</b>		<b>65</b> 84815
6581011		6584818
658210 <b>1</b>	VATUAT	6584821
6582102	THILL	6584824
6582901		6584835
658480 <b>1</b>	प्रकारित जगते	6589901
6584802	বাজনান নান্য	6589902

### 659 Floor coverings

6591202	6596101
6592101	6596201
6594101	659 <b>62</b> 0 <b>7</b>
6594102	6596208
6594103	6596211
6594203	6596212
6594901	659 <b>7</b> 01 <b>1</b>

# 66 Non-metallic mineral manufactures n.e.s.

6618301		6643001
6618302		6651101
6618311		6651104
6624500		6651200
6633 <b>303</b>		6658900
6633 <b>312</b>		6672900
6633332		
	Y Party	
	67 Iron and steel	
6712002 6716101 6716200 6716901 6716902 6725101	सन्यमेव जयने	6733402 6733902 6745101 6745201 6746107 6760101
6725109 6732209		6770102
6732601		6770201 6781001
<b>67</b> 32609		6781002
6732701		6781003
6732709		<b>67</b> 8300 <b>1</b>
6733401		6783009

6822202

#### 67 Iron and steel contd.

6785001	6793000
6785002	6794100
6785003	

#### 68 Non-ferrous metals

	- Erral	
6811300		6842 <b>111</b>
6811401		6842112

69 Structures and parts of structures n.e.s of iron, steel and aluminium

6911001	6931101
6911004	6931102
6911007	6931103
6911008	6932001
6911013	6935101
6912001	6940103
6912111	6940201
6912112	6940202
6921102	6940213
6924101	6951000

69 Structures and parts of structures n.e.s. of iron, steel and aluminium contd.

6953201		6991200
6953202		6991301
6953300		6991302
6953401		6994101
6953906	Care of	6996301
6954127		6996501
6954301		6997903
6960301		6997906
6973401	YMYRAT	699790 <b>7</b>
6973421		6998122
6974122		
6974201	सत्यमेव जयते	
6974301		
6975202		
6991101		
	(Sec. 6 Residuary)	
6133003		6341001
6251000		634200 <b>1</b>
6252000		634320 <b>1</b>
6254000		6344300
		6353000
625990 <b>5</b>		0333000

### Section: 7

71 to 75 Non-electrical machinery

7111001		7244311
7119900		7244902
7132201		7244903
7132202		7246905
7132204		7246911
7132205	A 120 A	7247903
7132206		7271901
7133201		7272101
7133211	VIIII	7272204
7139103	THIRD	7272205
7139107		7272901
7139108		7284201
<b>71</b> 3930 <b>3</b>	सत्यमेव जयते	7284802
7162101		7284806
7162301		<b>72</b> 84809
716900 <b>1</b>		7413202
7169002		7361307
7211901		7361311
7211902		7361504
7212900		7361802
7213800		7361902
7224000		7359001
7234800		7372902
7239003		<b>7</b> 411001

71 to 75 Non-electrical machinery contd.

7413101		7432000
7414102		7441101
7414903		7444202
7415001		7449003
7415002		7449005
7416001	Emil)	7452701
7422001		7452711
7422002		7491901
7422202		74 92 00 3
74 281 01	7/1/7/47	7499900
74 29 0 0 2		7511200
7431001		7518100
	सत्यमेव जयते	

76. Telecommunications and sound recording reproducing apparatus and equipment

7621000	7642001
7622000	7642002
7628009	7642003
7631100	764 2005
7631801	7642006
7638100	7649100
7638802	7649 200
7633809	7649302

# 77. Electrical machinery

7711101	775 <b>72</b> 06
7711118	7757901
7711801	7758100
7711818	7763001
7712901	7764000
7721004	7768100
7721007	7768900
7721008	7781101
7721015	7781102
7721017	7781 201
7721019	7782104
7721022	7782201
7721023	7782901
7721024	7782902
7723011	7783204
7723012	7783105
7731019	7788102
7731021	7788402
7731022	7788403
7731023	7788404
7731029	7788405
7732400	7788411
7752101	7788600
7757203	7788900

### 78 and 79 Transport equipment

7821001		7852001
7821003		7853901
78 31 0 00		7853902
7832000		7853903
7841001		7853905
7841002	053	7853906
7842002		7914000
7849001		7915200
7849002	YEATY	7919101
7849003	12/1887	79 32 301
7851001		79 3280 6
78 51 0 0 3		79 38201
	सत्यमेव जयते	

### Section: 8

# 84. Articles of apparel and clothing accessories

84 22202	8431202
8423202	8431203
8424201	84 <b>31 2</b> 04
8424202	8432201
8429303	84 32 20 2
84 29 304	

84. Articles of apparel and clothing accessories contd.

8433203		8462106
8433205		8462901
8433206		8435103
84 3 3 3 0 3		8435104
84 3390 3	250	8435200
8434201		8435901
8434202		8435902
8434300	THATIY	8439301
84 35101	TAXARI	84 39 30 2
84 35102		8439303
8443103		84 39 304
8443104	सन्यमेव जयते	84 39901
8443105		8441010
844310 <b>5</b>		8441102
8443107		8441105
8443108		8441106
8443200	*	8441107
8451102		8441111
8451103		8441112
8452203		8441114
8462101		8441115
84 621 02		8441116
84 621 05		8441200

84. Articles of apparel & clothing accessories contd.

8462903		8471216
8471101		8471221
8471102		8471222
8471 207		8471223
8471212	PRINCES	8471224
8471214		8471225
8471215		8471226
	85. Footwear	
8510201		8510204
8510202	सन्यमेव जयते	8510211
8510203		8510212
	89. Miscellaneous articles n.e.s.	manufactures
892110 <b>1</b>		8947206
8922001		8947213
892200 <b>2</b>		8952102
8931002		8960100
8947204		8972002
8947205		8973101

84. Miscellaneous manufactures articles n.e.s. contd.

		•
8973102		897310 <b>7</b>
8933001		8973108
8933002		8973104
8935001		8973203
8947203		8993201
897310 <b>3</b>	TANKAL	8999701
	Residuary Sec. 8	
	सत्यमेव जयते	
8122000		8310102
8211102		8310201
8219101		8811100
821910 <b>2</b>	r	88 30 001
8219103		8830002
6310107		8851102
8310111		

#### ANNEX - VI

# LIST OF SAMPLED COMMODITIES AS PER 7-DIGIT OF ITC REV.2 UNDER IMPORT FOR PROPOSED SERIES (BASE 1978-79=100)

#### Section: 0

	02 Dairy products	
0224102		0224902
0224202		0230002
0224302	erreto.	0230003
0224303		
	041 to 048 Cereals a cereal preparations	and
0411000	TEATER	0440000
0412002		0460100
0422102	सन्यमेव जयने	
0422200	वालवान वावत	
	057 and 058 Fruit and	l nuts
0575100		0577901
0575201		0579303
0575209		0579602
0577303		0579603
0577401		0579801
0577402		0579901

#### 075 Spices

 0752201
 0752301

 0752202
 0752302

#### (Sec.0 - Residual)

 0542001
 0542007

 0542002
 0548400

 0542004
 0721000

 0542005
 0980100

#### Section: 1

11 - Beverages

1124100

#### Section: 2

22 Oil seeds and oleaginous fruit

# 23 Crude rubber (including synthetic and reclaimed)

2320201 2320202	2331600
	2331909

#### 25 Pulp and waste paper

	Carried .	
2512000	AND DE	<b>2517</b> 200
2516000		2518100
2517100		2518200

# 26 Textile fibres and wastes

2613001	सन्यमव जयत	2665300
2631201		2665903
2631203		2671102
2631204		2681000
264000 <b>1</b>		2686100
2651100		269010 <b>1</b>
2651400		2690102
2665200		2690202

#### 271 Crude fertilizers

#### 274.1 Sulphur

27 Excl. 271 and 274.1 Minerals (excl. coal, petroleum and precious stones)

287 Ores and concentrates of base metals, nes.

2875000 2879200

288 Non ferrous base metal waste and scrap nes

#### (Sec. 2 - Residual)

2472124	2786201
2782402	2820900
2784001	2922203
2784011	2922204
2784012	

#### Section: 3

333 Petroleum, crude

3330000

334 Petroleum product

3341000	Con 1100 - 201 Cal	3343000
3342000	सन्यमेव जयन	

#### Section: 4

# Sec. 4 Animal & vegetable oils, fats and waxes

4113201	4236000
4113209	4239100
4232000	4242000
4234001	4243000
4234002	4314301
423400 <b>3</b>	

#### Section: 5

#### 51 Organic chemicals

5112901		5138200
5112904		5139003
5112905		5139004
5113912		5145012
5121100		5145023
5121400		5145026
5121500	A. 1881	5146048
5121702		5146051
5121703		5148900
5121911	VICTOR	5156101
5121913	THIN	5156908
5121915		5156916
5123401	(See 3000 - 200 GG	5156918
5123402	सद्यमेव जयते	5156928
5123604		5162114
5123612		5162400
5137801		5162908
5137911		5162917
5138100		5169106
		5169900

#### 52 Inorganic chemicals

5221 <b>206</b>	522 <b>14</b> 03
5221207	5221503

52	Inorganic	chemicals
cor	ntd.	

5221600		5225907
5221801		5231101
5221802		5231912
5222401	profession .	5232301
5224602	AND	5 <b>23</b> 2302
5225101		5232506
5225202		5232801
	VARIAY	5239300
	53 Dyeing, tanning and colouring materials	đ -
5319200		5322201
5322103		5334404
5322104		
	54 Medicinal and pharmaceutical products	<b>-</b>
5411005		5411019
54 <b>11</b> 00 <b>6</b>		
2411000		5417911

#### 56 Fertilizers manufactured

5621100		5623102
5621300		5623200
5621600		5623900
5621900		5629200
5622200	A SEEL	5629300
5622900		5629900
5623101		

58 Artificial resins and plastic materials and cellulose esters and ethers

	सत्यमेव जयते	
5323200	বল্পপূর্ব পর্বর	5834102
5824101		5834103
5827000		5835101
5829000		5842101
5831101		5842103
5931102		5842203
5831109		5851002
5832100		585290 <b>2</b>
5832200		585290 <b>3</b>
583310 <b>1</b>		

#### (Sec.5 Residual items)

5513032	5989203
5911001	5989801
5911007	5989 <b>903</b>
5922302	5989914
5983200	

#### Section: 6

# 64 Paper paperboard and articles thereof

	## JU 17/08/2007 1-2 JULIA	
6411001		6415908
6411009	सत्यमेव जयते	6415921
6412109		6415922
6413901		6418904
6415902		6418907
6415905		6421001

### 651 Textile yarn

6512100	6517102
6514300	6517105
6514400	6517106
651710 <b>1</b>	6517301

#### 651 Textile yarn contd

6517302	6517303
---------	---------

# 66 Non-metallic mineral manufactures nes

6612001		6649401
6612002		6649403
6612003		6658202
6612009	VICTOR	6658900
6623101	THIN	6671001
6637001		6672100
6637002	100 - 200 -	6673101
6642001	सत्यमव जयत	6673102
6644001		

#### 67 Iron and steel

6716904	6732401
6716912	6732402
6727501	6732501
6731102	<b>6732</b> 502
6731201	6732519
6731503	6732601

# 67 Iron and steel contd.

6733100		6745119
6733201		6745201
6733202		6745202
6733300	- TO	6745301
6 <b>7</b> 3350 <b>1</b>	4112	6745403
6733502		
6741400		6745406
6741501	VAVUAV	6746102
6741503	42367	6746104
6741504		6746105
6741509	सन्यमेव जयते	6746106
6744101	वाजनान जनव	6746107
6744109		674 <b>61</b> 08
6744201		6746201
6744202		6746301
6744209		6746302
6745101		6746309
6745102		6747009
6745104		6747019
6745109		6749101
		6749104

### 67 Iron and steel contd.

6749105		6750403
6749109		6750511
6750101		6781009
6750111		6782101
6750112		6782300
675020 <b>2</b>		6782400
6750211	STEELS.	6785001
6750212		6785003
6750401		6793000
675040 <b>2</b>	VICTI	6794200
	T57 F37	
	682 Copper	
	सत्यमेव जयते	
6821201	বাল্পাল প্ৰথ	6822300
6821209		6822400
6822 <b>107</b>		6822501
682220 <b>2</b>		6822502
6322212		
	683 Nickel	
	OOD MICKET	
6831001		6832201
6831011		6832202
6832101		6832203
6332102		6832400

#### 685 Lead

#### 685**1101**

6891500

#### 687 Tin

6871001 6871009		6871019
	69 Manufactures of metal nes	
6911001		6954123
6924301	सन्यमेव जयते	6996501
6924302		6999101
6940202		6999201
6951000		
	(Residual under Sec.	.6)
6861001		689990 <b>1</b>
6863101		6899911
6891101		6899923

#### Section: 7

# 71 Power generating machinery and equipment

7119900		7144000
7126011		7148100
7129002		7148800
7129003	~ Final ~	7162200
7131100	会影響信念	7162301
<b>71</b> 31900		7162309
7132106		7169001
7132206	Y20.3 8.6.3	7169002
7139104		7169003
7139105		7169004
7139108	सत्यमेव जयते	7187002
7139204		7188100
7139205		7188200
7139302		7188900
7139303		

# 72 Machinery specialised for particular industries

7211901	7234400
7213800	7234600
7219900	7234800

72 Machinery specialised for particular industries contd.

7239002		<b>7</b> 252002
723 <b>9</b> 00 <b>3</b>		7259100
7239005	CONTRACT OF THE PERSON OF THE	7259900
7239006		7264101
7243103		7268900
7243904		7269100
7244902	YAVRAT	7269902
7244904	ALC: LAIS	7281100
7245104		7281206
7245402	सत्यमेव जयते	7281209
7246113	333113131	7281902
<b>7</b> 24690 <b>1</b>		7283101
7246905		7283900
7246911		7284103
7247902		7284302
7247903		7284500
7248000		7284802
7248012		7284803
7251200		7384903
7252001		

# 73 Metal working machinery

7361511		7369001
736 <b>1513</b>		7372100
7361901		7372901
7361904		7372902
7361905		7373231
7361906	CONTRACT OF THE PARTY OF THE PA	

74 General industrial machinery and equipment, nes and machine parts nes.

	ALC ENT	m., n.o.o.d
7412001		7428801
7412003	CHEROCO MICH	7429001
7413100	सत्यमेव जयते	742900 <b>2</b>
7413102		7429003
7413103		7431001
7413111		<b>7</b> 43 <b>1</b> 00 <b>3</b>
7413201		7432000
7413202		7433000
7416002		<b>7</b> 43490 <b>1</b>
7416022		7424)0 <b>2</b>
7422001		7436001
<b>7</b> 428 <b>102</b>		<b>7</b> 43900 <b>1</b>
7428103		7439002
		7441900

74 General industrial machinery and equipment, nes and machine parts nes. contd.

7442201	7491 <b>3</b> 02
7442202	7491304
7442302	749130 <b>5</b>
7449002	7491306
7449004	7491402
7449005	<b>7</b> 492003
7452202	<b>74</b> 93001
7452711	7493002
7491101	7493005
7491102	7499101
7491104	7499201
7491105	<b>7</b> 499900
7491301	
	75 Office machines and auto- matic data processing equip- ment
7512101	7533000
<b>7</b> 51280 <b>2</b>	7533000

### 77 Electrical machinery

7711101	7761000
7711118	<b>7</b> 76300 <b>1</b>
7712202	776 <b>3</b> 00 <b>9</b>
7712901	7764000
7712902	7768900
7721014	7782902
77210 <b>17</b>	7783111
7721023	7783201
7 <b>72</b> 1031	7788101
7722002	7788102
7723001	7788402
77 23005	<b>77</b> 384 <b>11</b>
7731001	7788502
7731023	7788600
7732400	<b>77</b> 887 <b>02</b>
7741009	<b>7</b> 78870 <b>3</b>
7742001	7788705
7742009	7783900
<b>7</b> 7 587 00	
7758900	

Section:

78 & 79 Transport Equipment

7822001		7919902
7832000		7921001
7849001		7924001
7849002		7929000
7849003		7932401
7861300		<b>7</b> 933000
7912001		<b>7</b> 938400
	Residuary under Se	ec.7
7641001	TATAL	<b>7</b> 649301
7641002		<b>7</b> 649302
<b>7</b> 642005	सत्यमेव जयते	<b>7</b> 64930 <b>3</b>
<b>7</b> 643002	পল্লপণ সধল	<b>76</b> 49304
7648100		<b>7</b> 64930 <b>5</b>
7648300		<b>76</b> 499 <b>02</b>
7649100		
8		
	87 Professional, sand controlling apand instruments	
871030 <b>1</b>		8720231
8710411		8720300

	87 Professional, scient and controlling apparainstruments, contd.	
8741101		8745301
8741214		8745404
8742900		8748200
8843001		87.18302
874300 <b>2</b>	- E-3	8748912
8744001		8749001
8744004		8749002
8744021		8749003
3 <b>7</b> 440 <b>32</b>	YMY 54.3	8749005
8745101		
	88 Miscellaneous manuf tured articles	ac-
8811100		8822203
8811900	:	8822300
8812900	:	3822401
8813900	1	8830002
3822101	1	3851300
8822201	1	3851400
8822202		8852902

#### (Residuary under Sec.8)

8921101	8973101
8922002	8998401
8928200	



#### ANNEX - VII

# RECOMMENDED LIST OF COMMODITY BLOCK FOR WHICH ADJUSTMENTS MAY BE MADE FOR INCOMPLETE COVERAGE

#### LIST FOR EXPORTS

ITC Rev 2 Codes	ITC Rev 2 Codes	ITC Rev 2 Codes
011	281	654
034 & 035	282	658
036 & 037	287	659
041	291	66
042	292	671
046	322	673 & 674
048	334	677
054 & 056	424	678
057 & 058	51	681
0 61	सद्य 52 जयते	682
071	53	684
074	54	691
075	5 <b>5</b>	692
081.3	611	694
121	612	695
22		

ITC Rev 2 Codes	ITC Rev 2 Codes	ITC Rev2 Codes
22	625 & 628	696
261	634 <b>&amp; 63</b> 5	697
263	651	699
273	652	71
278	653	72
73	78	85
74	79	88
. 75	82	89
76	83	
77	84	
	TATIBLE	
	सत्यमेव जयते	

#### LIST OF IMPORTS

		• •
ITC Rev 2 Codes	ITC Rev 2 Codes	ITC Rev 2 Codes
02	274	665
041	287	667
044	288	671
046	333	672
047	334	673 & 674
054	41	675
057	42	678
075	43	679
12	51	68 2
- 22	52	683
	ANTICO-IVA	
23	53	684
25	4 54 144	685
261	56	687
263	58	689
264	64	691
265	651	692
266 & <b>2</b> 67	661	694
268	662	695
269	663	699
271	664	71

ITC Rev 2 Codes	ITC Rev 2 Codes
	874
	881
	882
	883
	885
	892
	898
(金属)	
	स्यमेव जयने

#### ANNEX - VIII

# PROPOSED PROFORMA FOR PRESENTATION OF EXPORT INDICES OF FOREIGN TRADE OF INDIA

ITC -R 2 Codes	Major Heads
01	Meat and meat preparations
03	Fish and fish preparations
04	Cereals and cereal preparations
054 & 056	Vegetables
057 & 058	Fruits and nuts
061.1 & 161.2	Sugar
071	Coffee
074	Tea
075	Spices
081.3	Oilseed cake
1	NA NOT
Section: 0	Food and food articles
12	Tobacco and tobacco manufactured
Section: 1	Beverage and tobacco
263	Raw cotton
26 excl. 263	Textile fibres and waste excl. cotton
27 excl. 271	Minerals (excl. coal, petroleum etc)
281	Iron ore and concentrate
287	Ores and concentrates of base metals n.e.s.
29	Crude animals & vegetables materials n.e.s.

ITC -R 2 Codes	Major Heads
Section: 2	Crude materials inedible except fuels
322	Coal
3 <b>3</b> 4	Petroleum products
Section: 3	Mineral fuels, lubricants etc.
Section: 4	Animal & vegetable oils and waxes
Section: 5	Chemicals and related products
611 & 612	Leather and leather manufactures excl. footwear
651	Textile yarn
652	Cotton fabrics woven
653 & 654	Textile fibres other than cotton
658	Made-up articles of textile materials
659	Floor coverings
66	Non-metallic mineral manufactured n.e.s.
67	Iron and steel
68	Non-ferrous metals
69	Structures and parts of structures n.e.s. of iron steel or aluminium
Section: 6	Leather, leather manufactures n.e.s. and dressed furskins

ITC -R 2 Codes	Major Heads
71 to 75	Non-electrical machinery,
76	Telecommunications and sound recording/reproducing apparatus and equipment
77	Electrical machinery
78 & 79	Transport equipment
Section: 7	Machinery & transport equipment
84	Articles of apparel and clothing accessories
85	Footwear
89	Miscellaneous manufactured articles n.e.s.
Section: 8	Miscellaneous manufactured articles

#### ANNEX - IX

# PROPOSED PROFORMA FOR PRESENTATION OF IMPORT INDICES OF FOREIGN TRADE OF INDIA

ITC - R 2 Codes	Major Heads
02	Dairy products
041 to 048	Cereals and cereal preparations
057 & 058	Fruits and nuts
075	Spices
Section: 0	Food and food articles
11	Beverages
Section: 1	Beverage and tobacco
22	Oilseeds and oleoginous fruit
23	Crude rubber (including synthetic and reclaimed)
25	Pulp and waste paper
26	Textile fibres and waste
271	Crude fertilizer
274.1	Sulphur
27 excl. 271 & 274.1	Minerals (excl. coal, petroleum crude fertilizer, sulphur and precious stones)
287	Ores & concentrate of base metals
288	Non-ferrous base metals waste and scrap n.e.s.
Section:2	Crude materials inedible except fuel
333	Petroleum, crude

ITC - R 2 Codes	Major Heads
334	Petroleum product
Section: 3	Mineral fuels, lubricants etc.
Section: 4	Animal and vegetable oil, fats and waxes
51	Organic chemicals
52	Inorganic chemicals
53	Dyeing, tanning and colouring materials
54	Medicinal and pharmaceutical products
56	Fertilizer manufactured
58	Artificial resins and plastic material and cellulose cater
	सत्यमेव जयते
Section: 5	Chemicals & related products
64	Paper, paper board and articles thereof
651	Textile yarn
66	Non-metallic mineral manufactures n.e.s.
67	Iron and steel
682	Copper
683	Nickel
684	Aluminium
685	Lead
687	Tin
69	Manufactures of metal n.e.s.

ITC - R 2 Codes	Major Heads
Section: 6	Leather, leather manufactures, n.e.s. and dressed furskins
71	Power generating machinery & equipment
72	Machinery specialised for parti- cular industries
73	Metal working machinery
74	General industrial machinery & equipment n.e.s.
75	Office machines & automatic data processing equipments
77	Electrical machinery
78 & 79	Transport equipment
Section: 7	Machinery & transport equipment
87	Professional scientific and controlling instruments and apparatus n.e.s.
88	Photographic apparatus etc.
Section: 8	Miscellaneous manufactured articles

#### ANNEX - X

#### RESULTS ON QUICK INDICES

Table I and II below present the values of "quick indices" based on 50 major items entering India's export trade computed by various formula. The calculations were done on computer by the IIFT, New Delhi, utilizing the export statistics available on magnetic tape for the years 1968-69 through 1975-76. The object of this exercise was to examine the possibilities of quick indices of foreign trade based on a small number of items.

The 50 items were those having the largest value of trade in 1968-69 among items with quantity data available in unchanging units for all the years. The indices, however, are not strictly comparable with those of the existing series, as new adjustment for exclusion of items was made in computing the quick indices, as is done for the existing official series. Moreover, the choice of the 50 items could be possibly made in a more satisfactory manner, spreading them better over the different sections, divisions etc. The results, therefore, should be taken as extremely preliminary.

TABLE - I

UNIT VALUE INDEX NUMBERS (1968-69=100)

BASED ON 50 COMMODITIES OF INDIA'S

EXPORTS COMPUTED BY DIFFERENT FORMULA

Year	Chain base indices		Fixed base indices			
	Laspeyres	paasche	Fisher	Laspeyres	paasche	Fisher
1968-69	100	100	100	100	100	100
1969-70	104	104	104	104	104	104
1970-71	106	106	106	107	106	106
1971 - 72	100	101	101	101	99	100
1972-73	121	121	121	122	1 20	121
1973-74	147	147	147	147	146	147
1974-75	172	176	174	180	167	173
1975-76	181	183	180	180	177	179

TABLE II

QUANTUM INDEX NUMBERS (1968-69=100)

BASED ON 50 COMMODITIES OF INDIA'S

EXPORTS COMPUTED BY DIFFERENT FORMULA

Year	Chain base indices		Fixed base indices			
1	Laspeyers	Paasche	Fisher	Laspeyers	Paasche	Fisher
1.968+69	100	100	100	100	100	100
1969-70	95	95	95	95	95	95
1970-71	95	95	95	96	95	95
1971-72	98	99	99	100	98	99
1972-73	104	104	104	104	104	104
1973 <b>-</b> 74	105	105	105	106	105	105
1974 <b>-</b> 75	93	95	94	98	91	94
1975-76	99	100	99	102	101	101